

# (12) UK Patent Application (19) GB (11) 2 137 271 A

(43) Application published 3 Oct 1984

(21) Application No 8406310

(22) Date of filing 10 Mar 1984

(30) Priority data

(31) 8515/83

(32) 18 Mar 1983

(33) AU

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(51) INT CL<sup>3</sup>

E06B 9/20

(52) Domestic classification

E1J EG

(56) Documents cited

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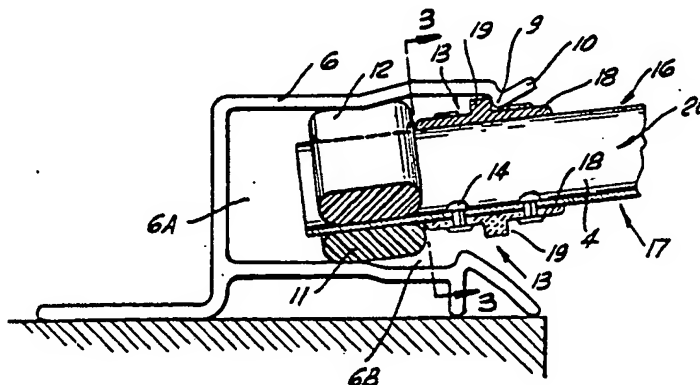
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(58) Field of search

E1J

(54) Windlocked rolling door

(57) A vertically movable door curtain has a plurality of parallel restraining bars (19) affixed to its marginal edges, each bar being movable within a guide channel 6 and engageable with inwardly directed locking flanges (9), thereby to hold the curtain against withdrawal from the guide channels when the curtain is strained by wind forces.


FIG. 2

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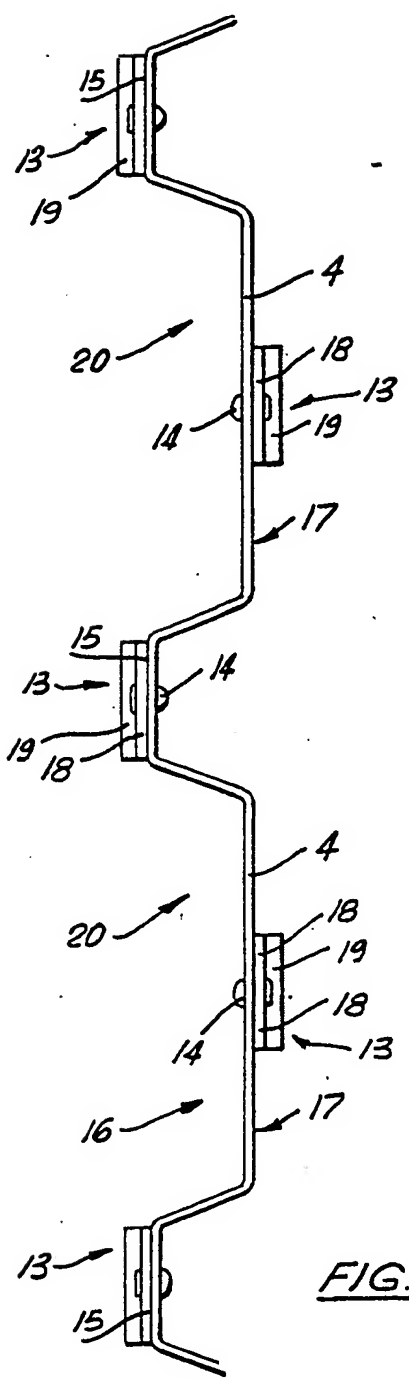


FIG. 3

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## SPECIFICATION

## Windlocked rolling door

- 5 This invention relates to door assemblies where the doorway is closed by a slat shutter or a continuous sheet rolling curtain. When closed these door curtains are supported at their opposite vertical marginal edges by guides such as inwardly opening vertically extending channels positioned at the sides of the doorway.

- Arrangements of the type described above are generally satisfactory in most applications. It has been found, however, that in conditions of high winds the curtain tends to bow inwardly or outwardly such that its marginal edges move towards each other and disengage themselves from the guide channels. The door may then be torn completely away and itself constitute a safety hazard while leaving the doorway unprotected.

- In the present invention it is proposed to provide these door curtains with greater resistance to high winds. Means are generally employed to lock the opposite marginal edges of the door curtains to their respective vertical guides in a manner which will permit a predetermined amount of deflection of the curtain without tearing the edges away from the guides.

- The present invention resides in providing a restraining bar on said means to further ensure that the marginal edges will be retained within their respective vertical guides.

According to the present invention there is provided a windlocked door assembly comprising:

- a pair of vertically disposed guides affixed to opposite sides of a doorway, said guides having oppositely disposed side walls defining an inwardly opening U-shaped channel;

inwardly directed locking flanges at or adjacent the free edges of said side walls;

- a vertically movable door curtain having parallel restraining bars affixed to at least one side of said curtain at its opposite marginal edges, each of said opposite marginal edges of said curtain being slidable within one of said guides, each said bar being movable within one of said inwardly directed locking flanges, each of said bars being able to engage one of said locking flanges and hold said door curtain against withdrawal from said guides when said door curtain is strained by wind forces.

- A preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

- Figure 1 is a section on a horizontal plane through one edge guide and a part of a door curtain constructed in accordance with the invention, the door being shown in its rest or unstrained position.

Figure 2 is a view identical to Fig. 1 but showing the door in a strained position.

Figure 3 is a cross-sectional view taken on line 3-3 of Fig. 2 showing the door curtain.

- Referring to Fig. 1, the door includes a curtain supported at each of its opposite vertical edges 5 by vertical guide channels 6 secured to the doorway edge posts 7 by bolts or other suitable means engageable with an attachment flange 8 running parallel with the guide channel 6.

- Each guide channel 6 is generally U-shaped in sectional configuration with inwardly directed locking flanges 9 defined by part of the free edges 10 of the U-shaped channel 6. The channel 6 has a narrow portion 6A and an adjacent wider portion 6B adjacent the locking flanges 9.

- The door is shown in its normal configuration in Fig. 1 with each of its opposite edges 5 located within the respective guide channel 6. The door curtain is of a well known corrugated form as best shown in Fig. 3 and each edge 5 is provided on each side with resilient wearing strips 11 and 12 respectively. In addition, each edge 5 is further provided with a plurality of restraining bar units 13 in the form of T-shaped aluminium extrusions. The restraining bar units 13 are each separately secured by rivets 14 or other means to the adjacent crests 15 of the curtain corrugations on the inside 16 of the door curtain. If required, the units can also be applied to the outside 17 of the door curtain. In this case, the maximum transverse dimension between the restraining bars on opposite sides of the door curtain is preferably less than the distance between the inwardly directed locking flanges, while still sufficient to engage one of the bars with one of the flanges when the door is strained by wind forces.

- The restraining bar units are located adjacent the wearing strip and run parallel to and within the U-shaped guide channels 6. Each unit includes a flat web 18 and an upstanding flange 19 which defines the restraining bar and extends parallel with the guide channels and in alignment with the identical restraining bar flange on adjacent bar units on neighbouring corrugation crests. The restraining bars flanges 19 are of sufficient size to engage the inwardly directed flanges 9 when the door curtain 4 is partially strained by wind forces as shown in Fig. 2. This serves to hold the door edges 5 within the channels 6.

- In other embodiments the discrete restraining bar units positioned along one edge of the door curtain may be replaced by a single continuous strip which extends from crest to crest, spanning the corrugation valleys 20.

Although the invention has been described with reference to a specific example, it will be appreciated that the invention may be embodied in many other forms.

## CLAIMS

1. A windlocked door assembly comprising:
  - 5 a pair of vertically disposed guides affixed to opposite sides of a doorway, said guides having oppositely disposed side walls defining an inwardly opening U-shaped channel;  - inwardly directed locking flanges at or adjacent the free edges of said side walls;
  - 10 a vertically movable door curtain having parallel restraining bars affixed to at least one side of said curtain at its opposite marginal edges, each of said opposite marginal edges of said curtain being slidable within one of said guides, each said bar being movable within one of said inwardly directed locking flanges, each of said bars being able to engage one of said locking flanges and hold said door curtain against withdrawal from said guides when said door curtain is strained by wind forces.
2. A windlocked door assembly according to claim 1 wherein said door curtain is a corrugated sheet and said bars are secured to the adjacent crests of each corrugated sheet.
3. A windlocked door assembly according to claim 1 wherein said bars are secured to both sides of said door curtain.
4. A windlocked door assembly according to claim 1 wherein said bars comprise a single continuous strip.
5. A windlocked door assembly according to claim 1 wherein said restraining bars are T-shaped in cross-section, including a web and upstanding flange.
6. A windlocked door assembly according to claim 5 wherein said upstanding flange has a cross-section thicker than that of said web.
7. A windlocked door assembly according to claim 1 wherein said channel has a narrow portion and an adjacent wider portion adjacent said locking flanges.
8. A windlocked door assembly according to claim 7 wherein said curtain includes a wearing strip on both sides of its opposite marginal edges, said strip being normally slidable within said narrow portion of said channel.
9. A windlocked door assembly according to claim 1 wherein the maximum transverse dimension between said restraining bar and the other side of said door curtain or any restraining bar located thereon is less than the distance between said inwardly directed locking flanges but sufficient to engage one of said bars with one of said flanges when said curtain is strained by wind forces.
10. A windlocked door assembly substantially as herein described with reference to the accompanying drawings.